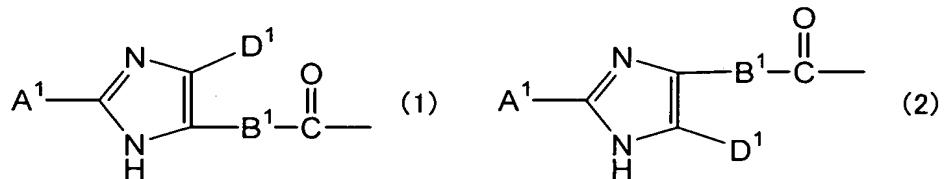


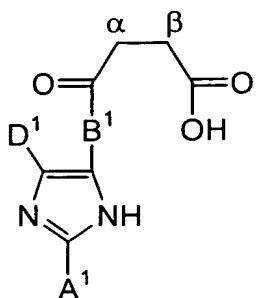
## CLAIMS

1. A thermoplastic elastomer consists of an elastomeric polymer having, on side chains, carbonyl-containing groups and imidazole rings, which rings bear a hydrogen atom on a nitrogen atom and also bear an alkyl, aralkyl or aryl group.
2. The thermoplastic elastomer according to claim 1, wherein the side chains have a structure of formula (1) or (2) below

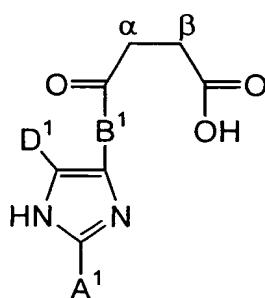


(wherein A<sup>1</sup> is an alkyl group of 1 to 20 carbons, an aralkyl group of 7 to 20 carbons or an aryl group of 6 to 20 carbons; B<sup>1</sup> is a single bond, an oxygen, nitrogen or sulfur atom, or an organic group which may include these atoms; and D<sup>1</sup> is a hydrogen atom, an alkyl group of 1 to 20 carbons, an aralkyl group of 7 to 20 carbons, or an aryl group of 6 to 20 carbons).

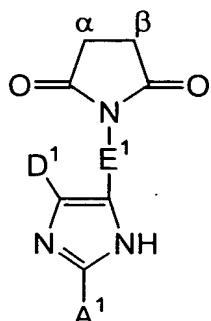
3. The thermoplastic elastomer according to claim 1 or 2,  
wherein the side chains have a structure of any one of  
formulas (3) to (6) below which is bonded to a main chain  
at  $\alpha$  or  $\beta$  position.



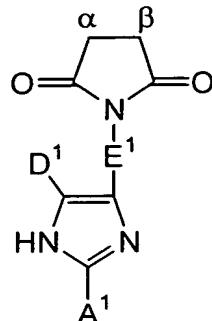
(3)



(4)



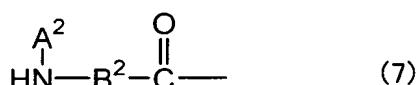
(5)



(6)

(wherein A<sup>1</sup> is an alkyl group of 1 to 20 carbons, an aralkyl group of 7 to 20 carbons or an aryl group of 6 to 20 carbons; B<sup>1</sup> and E<sup>1</sup> are each independently a single bond, an oxygen, nitrogen or sulfur atom, or an organic group which may include these atoms; and D<sup>1</sup> is a hydrogen atom, an alkyl group of 1 to 20 carbons, an aralkyl group of 7 to 20 carbons or an aryl group of 6 to 20 carbons).

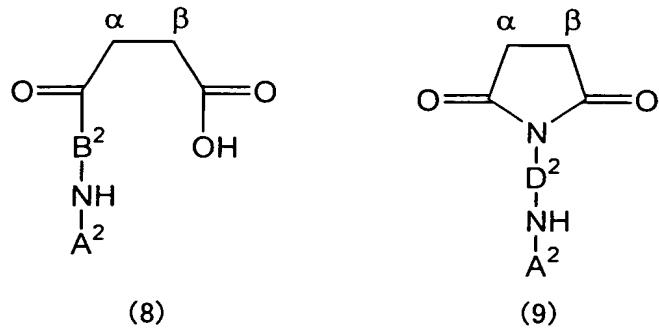
4. A thermoplastic elastomer having side chains which contain a structure of formula (7) below



(wherein A<sup>2</sup> is an alkyl group of 1 to 30 carbons, an aralkyl group of 7 to 20 carbons or an aryl group of 6 to 20 carbons; and B<sup>2</sup> is a single bond, an oxygen atom, an amino group NR' (R' being a hydrogen atom or an alkyl group of 1 to 10 carbons), a sulfur atom, or an organic group which may include these atoms or group).

5. The thermoplastic elastomer according to claim 4,

wherein the side chains which include the structure of formula (7) have a structure of formula (8) or (9) below which bonds to a main chain at  $\alpha$  or  $\beta$  position



(wherein A<sup>2</sup> is an alkyl group of 1 to 30 carbons, an aralkyl group of 7 to 20 carbons, or an aryl group of 6 to 20 carbons; B<sup>2</sup> and D<sup>2</sup> are each independently a single bond, an oxygen atom, an amino group NR' (R' being a hydrogen atom or an alkyl group of 1 to 10 carbons), a sulfur atom, or an organic group which may include these atoms or group).

6. The thermoplastic elastomer according to claim 4 or 5 which also has a nitrogen heterocycle-containing side chains.

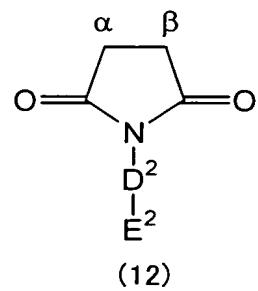
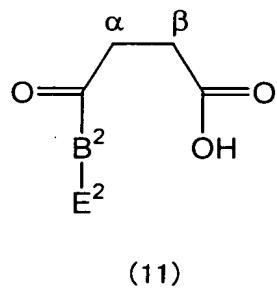
7. The thermoplastic elastomer of claim 6, wherein the nitrogen heterocycle-containing side chains include a structure of formula (10) below



(wherein E<sup>2</sup> is a nitrogen heterocycle; and B<sup>2</sup> is a single

bond, an oxygen atom, an amino group NR' (R' being a hydrogen atom or an alkyl group of 1 to 10 carbons), a sulfur atom, or an organic group which may include these atoms or group).

8. The thermoplastic elastomer according to claim 7, wherein the nitrogen heterocycle-containing side chains have a structure of formula (11) or (12) below which bonds to a main chain at  $\alpha$  or  $\beta$  position

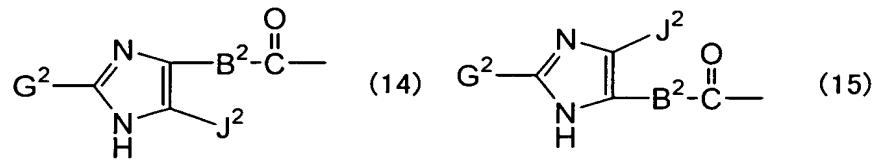
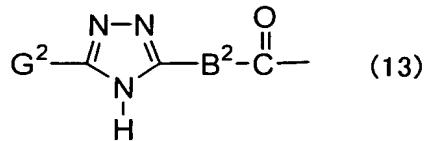


(wherein E<sup>2</sup> is a nitrogen heterocycle; and B<sup>2</sup> and D<sup>2</sup> are each independently a single bond, an oxygen atom, an amino group NR' (R' being a hydrogen atom or an alkyl group of 1 to 10 carbons), a sulfur atom, or an organic group which may include these atoms or group).

9. The thermoplastic elastomer according to any one of claims 6 to 8, wherein the nitrogen heterocycle is a five- or six-membered ring.

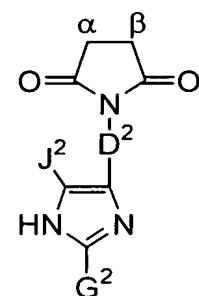
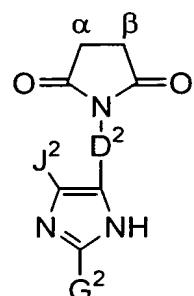
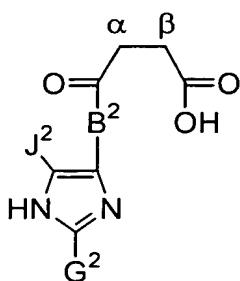
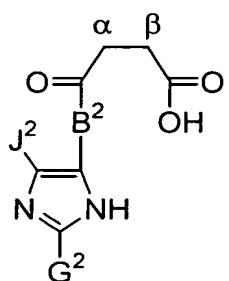
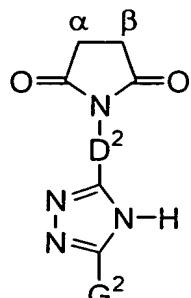
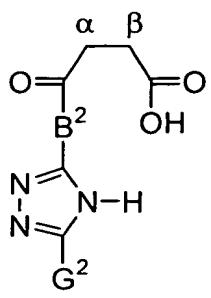
10. The thermoplastic elastomer according to claim 9, wherein the nitrogen heterocycle is a triazole ring, a thiadiazole ring, a pyridine ring or an imidazole ring.

11. The thermoplastic elastomer according to claim 7,  
 wherein the nitrogen heterocycle-containing side chains  
 have a structure of formula (13), (14) or (15) below



(wherein  $\text{B}^2$  is a single bond, an oxygen atom, an amino group  $\text{NR}'$  ( $\text{R}'$  being a hydrogen atom or an alkyl group of 1 to 10 carbons), a sulfur atom, or an organic group which may include these atoms or group; and  $\text{G}^2$  and  $\text{J}^2$  are each independently a hydrogen atom, an alkyl group of 1 to 30 carbons, an aralkyl group of 7 to 20 carbons, or an aryl group of 6 to 20 carbons).

12. The thermoplastic elastomer according to claim 11,  
 wherein the nitrogen heterocycle-containing side chains  
 have a structure of formula (16) or (17) or any one of  
 formulas (18) to (21) below which bonds to a main chain at  
 $\alpha$  or  $\beta$  position



(wherein B<sup>2</sup> and D<sup>2</sup> are each independently a single bond, an oxygen atom, an amino group NR' (R' being a hydrogen atom or an alkyl group of 1 to 10 carbons), a sulfur atom, or an organic group which may include these atoms or group; and G<sup>2</sup> and J<sup>2</sup> are each independently a hydrogen atom, an alkyl group of 1 to 30 carbons, an aralkyl group of 7 to 20 carbons, or an aryl group of 6 to 20 carbons).

13. A method of preparing the thermoplastic elastomer according to any one of claims 4 to 12, which method includes a reaction step in which a compound capable of introducing an imino group is reacted with an elastomeric polymer having cyclic acid anhydride groups on side chains.

14. The method of preparing the thermoplastic elastomer according to claim 13 which additionally includes a reaction step in which a compound capable of introducing a nitrogen heterocycle is reacted.
15. A thermoplastic elastomer composition which includes the thermoplastic elastomer according to any one of claims 1 to 12.
16. The thermoplastic elastomer composition according to claim 15 which additionally includes from 1 to 200 parts by weight of carbon black and/or silica per 100 parts by weight of the thermoplastic elastomer.